

Amendment  
10/681,936

5000-1-455

### IN THE CLAIMS

*Please amend the claims as follows:*

1. (Currently Amended) An ~~signal transmission~~ apparatus for transmitting signals between ~~[[,]]~~ a central station and a plurality of UWB networks being optically linked to permit communication between the central station and a device in a picocell that communicates via UWB, each respective UWB network of said plurality of UWB networks including a respective and a plurality of picocells arranged therein, within a UWB network~~said signal transmission apparatus~~; comprising:

a signal converter for converting into UWB signals received optical signals representing a UWB optically translated communication from a UWB network or the central station, wherein said plurality of UWB networks are optically cascaded, and said UWB networks communicate with the central station optically or the plurality of picocells within the UWB network into UWB signals, said signal converter transmitting said converted optical UWB signals downstream to a first picocell respectively associated with said signal converter, and for converting~~receiving~~ UWB signals generated from the first picocell and converting the UWB signals into optical signals; and

an optical signal transmission means for transmitting ~~ene~~ a first portion of the received optical signals to the signal converter and for transmitting another a second portion of the received optical signals to another UWB network of said plurality of UWB networks-second picocell;

2. (Currently Amended) The apparatus as ~~claimed-recited~~ in claim 1, wherein said another UWB network receives said second portion of the optical signals output from said

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optical signal transmission means, said another UWB network respectively further divides the second portion of the optical signal into separate portions, and wherein said transmission apparatus further including includes a first port for receiving optical signals from a UWB of said plurality of UWB networks or from the central station the other picocells in the UWB network and the central station.

3. (Currently Amended) The apparatus as claimed in claim 2, further including a second port for outputting the optical signals to other picocells in the UWB network another UWB network of said plurality of UWB networks.

4. (Original) The apparatus as claimed in claim 1, wherein the optical signal transmission means is a photocoupler.

5. (Withdrawn) An apparatus for transmitting signals between a central station and a plurality of picocells within a UWB network, comprising:

an optical switch for transmitting one portion of received optical signals from the central office or the plurality of picocells within the UWB network to a signal converter and another portion of the received optical signals to a second picocell, wherein the signal converter converts the received optical signals into UWB signals, transmits said converted optical signals downstream to a first picocell, and converts UWB signals generated within the first picocell into optical signals.

6. (Original) The apparatus as claimed in claim 5, wherein the optical switch includes a

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controller.

7. (Original) The apparatus as claimed in claim 5, wherein the optical switch stores a predetermined identification number and transmits the received optical signal to the signal converter only when a destination identification number in the received optical signal corresponds to the predetermined identification number.

8. (Original) The apparatus as claimed in claim 5, wherein the optical switch is a passive device.

9. (Withdrawn) The apparatus as claimed in claim 8, wherein the optical switch further includes sensors for controlling communication between each picocells in the UWB network.

10. (Withdrawn) The apparatus as claimed in claim 8, wherein the optical switch further configured for CSMA/CA method for controlling communication between each picocell in the UWB network.